



Water-Data Report 2008

**08186000 Cibolo Creek near Falls City, TX**

San Antonio Basin  
Cibolo Subbasin

LOCATION.--Lat 29°00'50", long 97°55'48" referenced to North American Datum of 1927, Karnes County, TX, Hydrologic Unit 12100304, at right downstream abutment of bridge on State Highway 123, 5.7 mi northeast of Falls City, and 10.4 mi upstream from mouth.

DRAINAGE AREA.--827 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--Oct. 1930 to current year. Water quality data: Chemical data: Oct. 1961 to Oct. 1966, Oct. 1968 to Sept. 1996, Dec. 2006. Biochemical data: Oct. 1961 to Oct. 1966, Oct. 1968 to Sept. 1996, Dec. 2006. Biological data: Dec. 1969 to Aug. 1995. Radiochemical: Feb. 1981 to Apr. 1981. Sediment: Sept. 1967 to June 1970, May 1972 to Sept. 1975.

REVISED RECORDS.--WSP 733: 1931. WSP 1058: 1935. WSP 1562: 1931(M), 1933. WSP 1923: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 264.28 ft above NGVD of 1929. Nov. 4, 1930, to Aug. 4, 1940, water-stage recorder at site 1,600 ft upstream at datum 0.56 ft higher. Aug. 5 to Sept. 13, 1940, nonrecording gage at site 150 ft to the left at same datum. Sept. 14, 1940, to Mar. 15, 1990, water-stage recorder at site 150 ft to the left at same datum. Mar. 16, 1990, to July 15, 1993, water-stage recorder at site 50 ft downstream at same datum. Satellite telemeter at station.

REMARKS.--Records good, except those for estimated daily discharges, which are fair. Flow is affected at times by discharge from the flood-detention pools of ten floodwater-retarding structures with a combined detention capacity of 16,620 acre-ft. These structures control runoff from 62.9 mi<sup>2</sup>. There are several diversions for irrigation above station. Much of the base flow is discharge from the Carrizo Sands in the vicinity of Sutherland Springs. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 35 ft occurred in Oct. 1913 (discharge, about 35,000 ft<sup>3</sup>/s). Maximum stage since at least 1890, that of Oct. 19, 1998.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,100 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 16	1530	*2,330	*11.11

## Water-Data Report 2008

**08186000 Cibolo Creek near Falls City, TX—Continued**

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**  
**DAILY MEAN VALUES**

<b>Day</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>
<b>1</b>	72	67	63	53	48	42	43	44	31	24	32	41
<b>2</b>	76	65	64	55	48	42	44	41	30	27	30	37
<b>3</b>	76	64	60	55	49	44	51	38	29	26	29	35
<b>4</b>	75	63	60	55	47	48	48	37	26	27	27	33
<b>5</b>	72	62	61	56	49	49	43	37	25	31	26	31
<b>6</b>	70	61	59	55	49	50	42	36	25	34	24	29
<b>7</b>	68	61	59	54	49	52	41	36	25	35	24	28
<b>8</b>	68	62	59	55	49	51	40	36	25	35	26	28
<b>9</b>	70	61	60	54	48	48	40	36	26	33	23	28
<b>10</b>	71	62	57	55	48	52	41	36	26	32	23	28
<b>11</b>	68	63	59	52	49	59	40	34	27	31	22	29
<b>12</b>	64	62	61	50	49	57	37	33	26	31	22	28
<b>13</b>	63	63	60	49	49	61	36	32	25	30	21	27
<b>14</b>	62	63	60	49	49	60	35	33	25	28	22	26
<b>15</b>	61	60	60	52	47	54	34	33	24	26	22	25
<b>16</b>	999	58	58	54	50	50	35	36	24	24	29	27
<b>17</b>	219	57	60	53	53	49	35	35	24	24	27	27
<b>18</b>	108	75	58	52	50	52	41	35	23	24	27	27
<b>19</b>	84	67	61	52	48	50	40	34	23	22	701	27
<b>20</b>	77	66	61	52	49	47	44	33	23	21	1,010	26
<b>21</b>	73	71	57	52	50	46	49	32	23	21	265	25
<b>22</b>	72	68	56	51	50	45	44	32	23	21	211	26
<b>23</b>	72	61	54	52	53	44	41	29	22	22	178	25
<b>24</b>	69	121	55	54	48	43	38	31	22	44	300	25
<b>25</b>	70	102	55	53	46	42	38	34	22	118	98	25
<b>26</b>	67	76	55	53	45	43	57	33	22	146	97	25
<b>27</b>	66	68	57	51	45	44	104	30	21	140	77	25
<b>28</b>	66	67	57	52	44	44	116	29	21	77	67	24
<b>29</b>	65	65	54	53	42	43	72	27	22	52	72	23
<b>30</b>	64	62	56	52	---	43	51	29	22	41	53	22
<b>31</b>	66	---	56	51	---	43	---	31	---	35	45	---
<b>Total</b>	3,273	2,023	1,812	1,636	1,400	1,497	1,420	1,052	732	1,282	3,630	832
<b>Mean</b>	106	67.4	58.5	52.8	48.3	48.3	47.3	33.9	24.4	41.4	117	27.7
<b>Max</b>	999	121	64	56	53	61	116	44	31	146	1,010	41
<b>Min</b>	61	57	54	49	42	42	34	27	21	21	21	22
<b>Ac-ft</b>	6,490	4,010	3,590	3,250	2,780	2,970	2,820	2,090	1,450	2,540	7,200	1,650

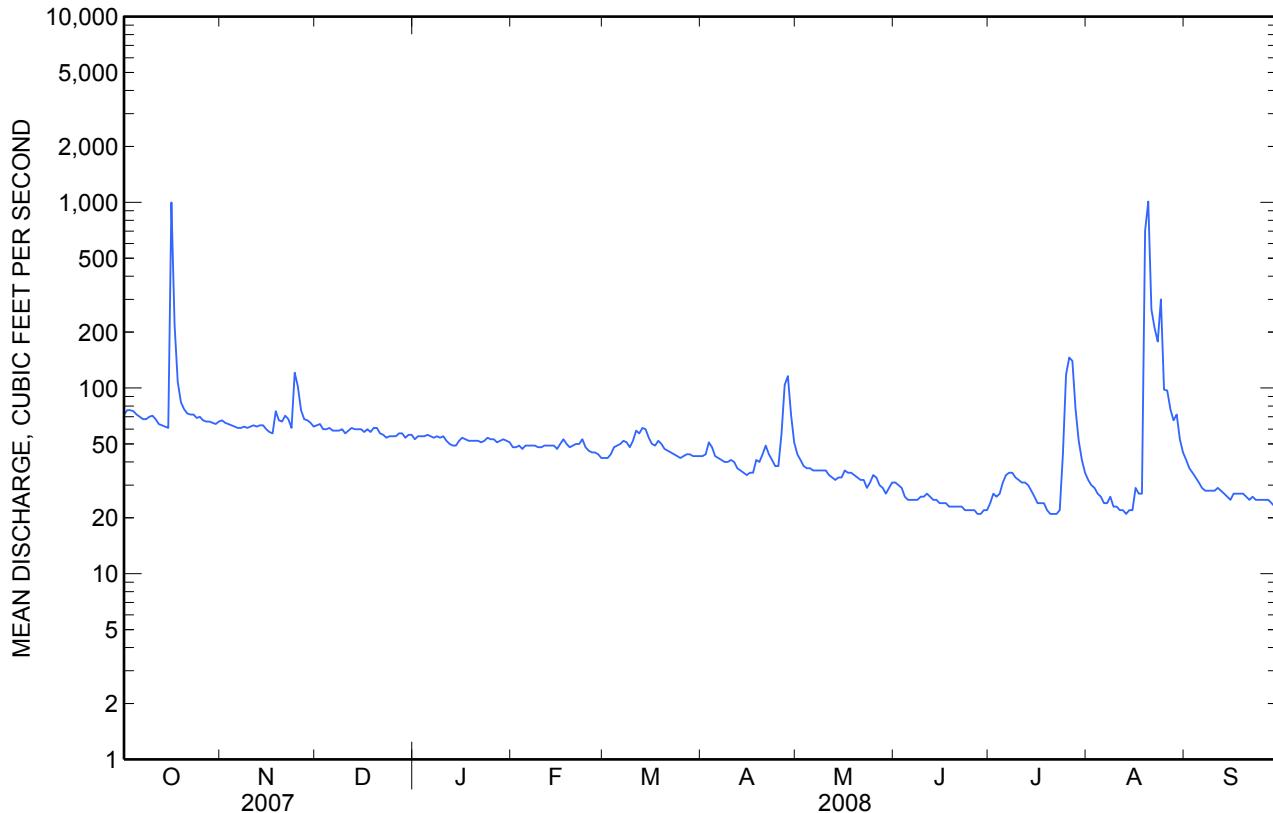
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2008, BY WATER YEAR (WY)**

	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>
<b>Mean</b>	156	136	105	95.8	113	81.2	157	228	250	163	67.8	158
<b>Max</b>	3,246	2,596	2,156	1,627	1,756	860	1,492	2,230	2,821	3,302	909	1,579
(WY)	(1999)	(2005)	(1992)	(1968)	(1992)	(1992)	(1977)	(1972)	(1987)	(2002)	(1946)	(1973)
<b>Min</b>	8.49	8.08	9.99	10.3	9.64	7.04	5.23	4.59	1.74	1.96	2.40	5.41
(WY)	(1932)	(1932)	(1955)	(1956)	(1956)	(1956)	(1971)	(1971)	(1967)	(1971)	(1956)	(1984)

**08186000 Cibolo Creek near Falls City, TX—Continued****SUMMARY STATISTICS**

	<b>Calendar Year 2007</b>	<b>Water Year 2008</b>		<b>Water Years 1931 - 2008</b>	
<b>Annual total</b>	154,948	20,589			
<b>Annual mean</b>	425	56.3		142	
<b>Highest annual mean</b>				717	1992
<b>Lowest annual mean</b>				10.4	1956
<b>Highest daily mean</b>	11,900	Jul 21	1,010	Aug 20	45,000 Oct 19, 1998
<b>Lowest daily mean</b>	28	Mar 6	21	Jun 27	0.00 Jul 30, 1956
<b>Annual seven-day minimum</b>	30	Mar 3	22	Jun 23	0.00 Aug 4, 1956
<b>Maximum peak flow</b>			2,330	Oct 16	51,200 Oct 19, 1998
<b>Maximum peak stage</b>			11.11	Oct 16	<sup>a</sup> 39.84 Oct 19, 1998
<b>Annual runoff (ac-ft)</b>	307,300		40,840		103,200
<b>10 percent exceeds</b>	861		70		145
<b>50 percent exceeds</b>	81		48		29
<b>90 percent exceeds</b>	40		24		10

<sup>a</sup> From floodmark.



**08186000 Cibolo Creek near Falls City, TX—Continued****WATER-QUALITY RECORDS****PERIOD OF RECORD--**

CHEMICAL DATA: Oct. 1961 to Oct. 1966, Oct. 1968 to Sept. 1996, Dec. 2006 to Oct. 10, 2007. (discontinued).

BIOCHEMICAL DATA: Oct. 1961 to Oct. 1966, Oct. 1968 to Sept. 1996, Dec. 2006.

BIOLOGICAL DATA: Dec. 1969 to Aug. 1995.

RADIOCHEMICAL DATA: Feb. 1981 to Apr. 1981, Dec. 2006 to Oct. 10, 2007. (discontinued).

SEDIMENT: Sept. 1967 to June 1970, May 1972 to Sept. 1975.

**REMARKS--**Water-quality data collected at this location are associated with Investigations Project: Surface Water - Ground Water Interaction in the Lower San Antonio River Watershed. Water-quality data collection began in Water Year 2007 and was discontinued in Water Year 2008, as noted above in the Period of Record.

**WATER-QUALITY DATA  
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 1 of 6

[Remark codes: &lt;, less than; E, estimated.]

Date	Time	Sample medium and type	Instan- taneous dis- charge, cfs (00061)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent of sat- uration (00301)	pH, water, unfltrd field, std units (00400)	Specif- ic conduc- tance, wat unf μS/cm (00095)	Temper- ature, water, deg C (00010)
Dec 19...	1030	Surface water, regular	28	730	7.8	88	7.6	1,240	19.0

**WATER-QUALITY DATA  
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 2 of 6

[Remark codes: &lt;, less than; E, estimated.]

Date	Hard- ness, water, mg/L as CaCO <sub>3</sub> (00900)	Calcium water, mg/L (00915)	Magnes- ium, water, mg/L (00925)	Potas- sium, water, mg/L (00935)	Sodium adsorp- tion ratio (00931)	Sodium frac- tion of cations (00932)	Sodium water, mg/L (00930)	Alka- linity, wat flt	Bicar- bonate, wat flt	Carbon- ate, wat flt	Hydrox- ide, wat flt	Chlor- ide, water, mg/L (00940)	
							CaCO <sub>3</sub> (00932)	Sodium water, mg/L (39086)	CaCO <sub>3</sub> (00453)	mg/L (00452)	mg/L (71834)		
Dec 19...	350	104	21.3	9.90	2.8	42	118	254	307	2	<.1	.41	133

## 08186000 Cibolo Creek near Falls City, TX—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 3 of 6

[Remark codes: &lt;, less than; E, estimated.]

Date	Fluor- ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L (00955)	Sulfate water, fltrd, mg/L (00945)	Residue water, fltrd, sum of consti- tuents mg/L (70301)	Residue on evap. at 180degC wat flt mg/L (70300)	Ammonia water, fltrd, mg/L (71846)	Ammonia water, fltrd, mg/L as N (00608)	Nitrate + nitrite water mg/L (00631)	Nitrate water, fltrd, mg/L as N (71851)	Nitrate water, fltrd, mg/L as N (00618)	Nitrite water, fltrd, mg/L as N (71856)	Nitrite water, fltrd, mg/L as N (00613)	Organic nitro- gen, water, unfltrd mg/L (00605)
	mg/L (00950)	SiO <sub>2</sub> mg/L (00955)	mg/L (00945)	mg/L (70301)	mg/L (70300)	mg/L (71846)	mg/L as N (00608)	mg/L (00631)	mg/L as N (71851)	mg/L as N (00618)	mg/L as N (71856)	mg/L as N (00613)	mg/L (00605)
Dec 19...	.41	7.53	178	E729	765	.04	.033	.56	2.46	.56	.025	.008	.40

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 4 of 6

[Remark codes: &lt;, less than; E, estimated.]

Date	Total nitro- gen, wat unf by anal ysis, mg/L (62855)	Ortho- phosphate, water, fltrd, mg/L as P (00660)	Ortho- phosphate, water, fltrd, mg/L as P (00671)	Phos- phorus, water, unfltrd mg/L (00665)	Alum- inum, water, fltrd, μg/L (01106)	Anti- mony, water, fltrd, μg/L (01095)	Arsenic water, fltrd, μg/L (01000)	Barium, water, fltrd, μg/L (01005)	Beryll- ium, water, fltrd, μg/L (01010)	Boron, water, fltrd, μg/L (01020)	Cadmium water, fltrd, μg/L (01025)	Chrom- ium, water, fltrd, μg/L (01030)	Cobalt water, fltrd, μg/L (01035)
	mg/L (62855)	mg/L (00660)	mg/L (00671)	mg/L (00665)	mg/L (01106)	μg/L (01095)	μg/L (01000)	μg/L (01005)	μg/L (01010)	μg/L (01020)	μg/L (01025)	μg/L (01030)	μg/L (01035)
Dec 19...	1.00	.388	.127	.168	<1.6	E.04	.35	15	<.06	81	<.04	<.12	.18

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 5 of 6

[Remark codes: &lt;, less than; E, estimated.]

Date	Copper, water, fltrd, μg/L (01040)	Iron, water, fltrd, μg/L (01046)	Lead, water, fltrd, μg/L (01049)	Lithium water, fltrd, μg/L (01130)	Mangan- ese, water, fltrd, μg/L (01056)	Molyb- denum, water, fltrd, μg/L (01060)	Nickel, water, fltrd, μg/L (01065)	Selen- ium, water, fltrd, μg/L (01145)	Silver, water, fltrd, μg/L (01075)	Stront- ium, water, fltrd, μg/L (01080)	Thall- ium, water, fltrd, μg/L (01057)	Vana- dium, water, fltrd, μg/L (01085)	Zinc, water, fltrd, μg/L (01090)
	μg/L (01040)	μg/L (01046)	μg/L (01049)	μg/L (01130)	μg/L (01056)	μg/L (01060)	μg/L (01065)	μg/L (01145)	μg/L (01075)	μg/L (01080)	μg/L (01057)	μg/L (01085)	μg/L (01090)
Dec 19...	E.25	E4	<.12	11.4	5.6	.3	1.4	.19	<.1	190	<.04	.72	E.55

## 08186000 Cibolo Creek near Falls City, TX—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007**

Part 6 of 6

[Remark codes: &lt;, less than; E, estimated.]

Date	Deu-			
	Sr-87/ Sr-86	Uranium ratio, water, fltrd,	terium/ Protium natural water, fltrd,	O-18 / O-16 ratio, water, unfltrd
per mil (75978)	μg/L (22703)	per mil (82082)	per mil (82085)	
Dec 19...	.70833	.30	-19.32	-3.35

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**

Part 1 of 5

[Remark codes: &lt;, less than; E, estimated.]

Date	Time	Sample medium and type	Instan- taneous dis- charge, cfs (00061)	Baro- metric pres- sure, mm Hg (00025)	Dis- solved oxygen, mg/L (00300)	Dis- solved oxygen, percent (00301)	pH, water, unfltrd field, std units (00400)	Specif- ic conduc- tance, wat unf μS/cm 25 degC (00095)	Temper- ature, air, deg C (00020)
Oct 10...	1040	Surface water, regular	62	752	6.9	86	8.1	1,170	29.0

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**

Part 2 of 5

[Remark codes: &lt;, less than; E, estimated.]

Date	Temperature, water, deg C (00010)	Hard- ness, water, mg/L as (00900)	Calcium CaCO <sub>3</sub> (00900)	Magnes- ium, water, mg/L (00915)	Potas- sium, water, mg/L (00925)	Sodium adsorp- tion ratio (00931)	Sodium frac- tion of cations (00932)		Alka- linity, wat flt	Bicar- bonate, wat flt	Carbon- ate, wat flt	Hydrox- ide, wat flt	Bromide water, fltrd, mg/L (71870)
							Sodium water, mg/L as (00930)	CaCO <sub>3</sub> mg/L (39086)					
Oct 10...	25.5	380	115	21.2	7.09	2.2	36	98.9	276	332	2	<.1	.43

## 08186000 Cibolo Creek near Falls City, TX—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**

Part 3 of 5

[Remark codes: &lt;, less than; E, estimated.]

Date	Residue Residue												
	Chlor-ide, water, fltrd, mg/L (00940)	Fluor-ide, water, fltrd, mg/L (00950)	Silica, water, fltrd, mg/L as SiO <sub>2</sub> (00955)	Sulfate, water, fltrd, mg/L (00945)	sum of constituents (70301)	180degC wat flt (70300)	Alum-inum, water, fltrd, µg/L (01106)	Anti-mony, water, fltrd, µg/L (01095)	Arsenic, water, fltrd, µg/L (01000)	Barium, water, fltrd, µg/L (01005)	Beryll-ium, water, fltrd, µg/L (01010)	Boron, water, fltrd, µg/L (01020)	Cadmium, water, fltrd, µg/L (01025)
Oct 10...	102	.36	10.7	166	E689	729	5.9	.16	1.9	92	<.01	307	<.04

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**

Part 4 of 5

[Remark codes: &lt;, less than; E, estimated.]

Date	Chrom-ium, water, fltrd, µg/L (01030)	Cobalt, water, fltrd, µg/L (01035)	Copper, water, fltrd, µg/L (01040)	Iron, water, fltrd, µg/L (01046)	Lead, water, fltrd, µg/L (01049)	Lithium, water, fltrd, µg/L (01130)	Mangan-ese, water, fltrd, µg/L (01056)	Molyb-denum, water, fltrd, µg/L (01060)	Nickel, water, fltrd, µg/L (01065)	Selen-ium, water, fltrd, µg/L (01145)	Silver, water, fltrd, µg/L (01075)	Stront-ium, water, fltrd, µg/L (01080)	Thall-ium, water, µg/L (01057)
	µg/L (01030)	µg/L (01035)	µg/L (01040)	µg/L (01046)	µg/L (01049)	µg/L (01130)	µg/L (01056)	µg/L (01060)	µg/L (01065)	µg/L (01145)	µg/L (01075)	µg/L (01080)	µg/L (01057)
Oct 10...	<.12	.64	<5.0	<8	.12	49.8	14.5	1.2	3.7	1.3	<.1	906	<.04

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008**

Part 5 of 5

[Remark codes: &lt;, less than; E, estimated.]

Date	Vana-dium, water, fltrd, µg/L (01085)	Zinc, water, fltrd, µg/L (01090)	Sr-87/Sr-86 ratio, per mil (75978)	Uranium, natural (22703)	Protium ratio, unfltrd (82082)	Deuterium/Protium ratio, unfltrd (82085)	O-18 / O-16 ratio, unfltrd (82085)
	µg/L (01085)	µg/L (01090)	per mil (75978)	natural (22703)	µg/L (82082)	per mil (82085)	ratio, unfltrd (82085)
Oct 10...	4.0	E1.6	.70823	1.86	-23.58	-3.84	